Fields of Opportunities

STATE OF IOWA

CHESTER J. CULVER, GOVERNOR
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DEPARTMENT OF NATURAL RESOURCES
RICHARD A. LEOPOLD, DIRECTOR

Iowa Department of Natural Resources
Underground Storage Tank Section

Responsiveness Summary
Notice of Intended Action, ARC 6596B, IAB 2/13/08

Proposed amendments to 567--Chapter 135 IAC:
Revised Tier 2 software model
Special procedures for assessing public water supply wells
Codifying corrective action meeting process for high risk sites

Comments were received from the following:

- John Martins, Director of Water Operations for Atlantic Municipal Utilities, Atlantic, IA
- Tom Norris, Petroleum Marketers' Management Insurance Company (PMMIC)
- Jeff Hove, Petroleum Marketers and Convenience Stores of Iowa (PMCI)
- Scott Scheidel, Comprehensive Petroleum Underground Storage Tank Fund Board
- Caseys General Stores
- Harry Brannen, Krause Gentle Corporation
- Rich Mach, City of Sioux City

General Summary of Comments:

Comments received represented views both in favor and in opposition of the proposed Chapter 135 NOIA amendments. Most people were in favor of implementation of the new model. The water supply interest groups, however, indicated the need to have special procedures for addressing water supply wells including consideration of capture zones determined by the source water protection program. Representatives of the petroleum industry, insurance and the state UST Fund did not support the additional provisions regarding special procedures for public water supply wells (PWS). They felt the revised model was sufficiently studied and calibrated to actual plume data such that it would be protective of receptors including wells. They indicated, except for the new model (Item 8), the additional changes went beyond the scope and recommendations of the Software Investigation Committee. The funding groups expressed the concern of undue burden on UST owners, operators and funding sources which they believed these special procedures would likely entail. Conversely, the water supply industry expressed concerns over public health and the cost of well replacement should the rules not sufficiently set out procedures for evaluating, preventing, and reducing risks to wells.

There were no substantive comments regarding the rule amendments implementing the corrective action meeting process, and establishing as an enforcement /compliance mechanism the Memorandum of Agreement which documents corrective action decisions and requirements.

As a result of the comments received during the public hearings held March 4, 5, and 6, 2008, as well as at the Administrative Rules Review Committee meeting on March 7, 2008, the department agreed to reconvene stakeholder meetings in an attempt to resolve some of the public's concerns. The final rule presented for EPC approval is modified from the NOIA approved in January, and it reflects the outcome of post-ARRC stakeholder meetings. It should be noted that after additional meetings, consensus was not gained on the PWS well evaluation.

Copies of the submitted written comments are available upon request.

Specific comments received on particular rule amendments:

ITEM 1: Amend rule 135.2 by adding the following definitions.
" "Sensitive Area" is a screening tool used to determine if a public water supply well warrants a more in-depth assessment. It is not intended to be a mechanism to assign a risk classification to the public water supply well receptor. If the leaking underground storage tank site is within a five-year capture zone, or within the 2500-foot radius as determined by the Geological Survey Bureau in the Source Water Protection Evaluation, or 1000 feet of a public water supply well, whichever is larger and has a Source Water Protection Aquifer designation of highly susceptible or susceptible, the leaking underground storage tank site will be considered located within a sensitive area."

PMMIC Comment*: This definition is not necessary and creates the notion that public water supply wells are at risk from LUST facilities, and this is not supported by scientific findings or existing data. Also, the rules require use of the old model for sites in sensitive areas even if the site would be no further action at Tier 1. This creates situation were two models would have to be used at Tier 2 – the old one for PWSs, and new one for other receptors.

PMMIC also requested data from the DNR of PWS wells impacted by LUST sites so that it could be determined if any wells could be impacted and not identified by the new Tier 2 software. PMMIC asserts the DNR has not documented one well impacted by a LUST site that would not have been identified by the proposed Tier 2 software.

Response: The definition was added in consideration of special procedures for looking at public water supply wells recognizing a two-dimensional model does not take into consideration pumping influence of PWS wells on plume movement. The DNR has overseen a number of LUST sites where PWS wells were affected by petroleum releases – sites where the standard Tier 2 assessment and/ or modeling procedure didn't necessarily identify the risk or accurately locate the plume. In some cases, upon completion of additional field work, deeper plumes ('diving') were identified (e.g., Climbing Hill, Ida Grove, Sioux City) (An expanded response has been provided to PMMIC – available upon request).

The definition is for the screening tool or 'well search area' to identify wells for which use of the new model may be inappropriate. As stated, the screening tool is not intended to presume a risk classification; it is merely a trigger for when sites and /or wells should be evaluated under the special procedures in 135.10(4). Under the 2/13/08 NOIA language, a LUST site located within a sensitive area would require use of the old Tier 2 model to evaluate the PWS and the new model for other receptors. We concur that having a site concurrently evaluated with two models

is cumbersome. We have modified the language to include use of one model (the new model) for site evaluation, and use of special site-specific procedures where the LUST site is within 2,500 feet of a PWS well.

ITEM 2 Amend paragraphs 135.8 (1) paragraphs "a" and "c" as follows:……
"a. …If a Tier 1 assessment is required and the department determines the leaking underground storage tank site is located within a sensitive area for a public water supply well, the department will issue a letter notifying the owner or operator that a Tier 2 Site Cleanup Report is required and the *Tier 2 Version 2.51* software must be used to evaluate the risk to the public water supply well receptor."
"c. The department can request a Tier 3 assessment of risk if the site conditions have not been adequately addressed by the Tier 2 procedures."

PMMIC Comment: The changes to the Tier 1 process are not supported with science, and are not consistent with ASTM standards as required by 455B.474 of the Iowa Code. We do not support the creation of a new "sensitive area" definition, and do not agree with creating two different versions of the Tier 2 software to be applied based on this new definition. Please see our comments to Item 1 above. We also do not support the Department having the ability to request a Tier 3 assessment. The ASTM process to which Iowa Code 455B refers to allows for a tiered approach to assessment. The Tier 1 look-up table assumes the worst-case scenario. If a high-risk condition exists at Tier 1, that condition including chemicals of concern, receptor, and the pathway may be addressed using a more specific assessment process known as Tier 2. If high-risk conditions exist at Tier 2, the owner has the option of completing corrective action or addressing the remaining high-risk conditions in a Tier 3. Industry standards do not dictate that a Tier 3 be conducted ever. The proposed changes will require Tier 3 assessments without corresponding high-risk conditions.

Response: The process was based on RBCA principals, in that a tiered approach is used and sites which do not pose a high risk are not required to take corrective action. There is flexibility built into the ASTM standard and the way states choose to apply it (e.g., the ASTM standard recognizes a soil ingestion pathway and the Technical Advisory Committee in 1996 opted not to include this pathway in Iowa's RBCA program). The Tier 1 evaluation should be made consistent with RBCA principals and the Tier 2 approach for the groundwater ingestion pathway. Currently at Tier 1, the point of exposure is assumed to be at the source when the pathway is complete ('worst case scenario') and the pathway is considered complete if there are wells within 1,000 of the site. The Tier 1 should be changed in consideration of the body of data from the source water protection program and the fact that pumping well can influence plumes. The 1,000-foot search radius for wells is arbitrary and not based on science. The rule has been modified since the NOIA to now include a 2,500-foot distance instead of 1,000 feet, but this has been removed from the paragraph on "Pathway Completeness". Because the majority of 5-yr capture zone areas fall within 2,500 feet, this distance appears an appropriate screening tool for determining which wells need no further assessment at Tier 1. Further, the risk to PWS wells should be evaluated with tools more appropriate and accurate for determining risk. This procedure is outlined in new paragraph 'f'.

The rules have been modified to not allow for two versions of software for evaluating a site (see response to Item 1).

The language regarding the DNR requiring Tier 3 assessments for pathways other than PWS well receptors has been removed. The DNR, however, believes it still has authority to require assessment and corrective action for receptors that fall outside the modeled plume where a risk condition is suspected or confirmed. The DNR will exercise this authority on a case-by-case basis.

The special procedures for evaluating PWS wells have been modified. Primarily, the groundwater professional will complete the screening and conduct the evaluation of PWS wells which do not fall out under the simple screening. The DNR will review the evaluation. If the DNR does not agree with an evaluation that indicates the well is not likely at risk, the DNR must establish there is a hydrogeological connection between the PWS well aquifer and the aquifer where the petroleum release occurred. Upon confirming a likely connection, the DNR then may require submittal of a Tier 3 work plan or hold a meeting to discuss what further information is needed to assess risk to the well.

ITEM 3 Amend paragraphs 135.10 (1) as follows:…
" ..if required by departmental correspondence per 135.8(1)a, the public water supply well receptor must be evaluated by the *Tier 2 Version 2.51* software."

PMMIC Comment: We do not support the use of two different versions of the Tier 2 software, and do not support the Department having the authority to request the use of an over-predictive model. Additional assessment of a well should only be required if the pathway is complete. This new criteria appears to invite unnecessary assessment, although it is not clear how the "pertinent information" may be utilized. See our comments to Items 1 and 2 above.

Response: See the response to Items 1 and 2.

ITEM 4. Amend paragraphs 135.10(4)*"a", "b" and "f*" as follows*:*
"a. …or (3) the department has determined the leaking underground storage tank site is within a sensitive area."
"b. Receptor evaluation. At a minimum, all drinking water and non-drinking water wells located within 1000 feet of the site must be identified. If the leaking underground storage tank site is located within a sensitive area for a public water supply well, the Groundwater Ingestion to Drinking Water Well Pathway must be evaluated using the *Tier 2 Version 2.51* software. All other pathways may be evaluated using the *Tier 2 Version 3.1* software. The owner or operator, the certified groundwater professional, public water supply operator, or the department may request a meeting to discuss the evaluation of the potential risk to a public water supply well.

All drinking or non-drinking water wells located within 100 feet of the largest actual plume (defined to the appropriate target level for the receptor type) must be tested, at a minimum, for chemicals of concern as part of the receptor evaluation. Actual plumes refer to groundwater plumes for all chemicals of concern. Untreated or raw water should be collected for analysis. The certified groundwater professional or the department may request additional sampling of drinking and non-drinking water wells as part of their evaluation."

PMMIC Comment: a. We do not agree with the additional Condition 3 which creates a new definition of pathway completeness if a site is in the newly defined "sensitive area". This new criteria does not utilize science to define if the pathway is complete. The new default of assuming pathway completeness is not consistent with ASTM standards, and is not supported with science.
b. We do not agree with the additional receptor evaluations. The new criteria would eliminate the use of calibrated models and instead would require additional evaluation based on new arbitrary distances from wells, and requires the use an old over-predictive version of the Tier 2 software.

Response: The rule has been modified since the NOIA. The term 'sensitive area' has been removed from the paragraph describing Pathway Completeness. Also see response to Item 2.

A two-dimensional groundwater flow model is not appropriate to determine if a groundwater ingestion pathway is complete when pumping wells are nearby. Because the majority of 5-yr capture zone areas fall within 2,500 feet, this distance appears an appropriate screening tool for determining which wells need no further assessment. Further, the risk to PWS wells should be evaluated with tools more appropriate and accurate for determining risk. The rule has been modified to include this assessment process. Primarily, the groundwater professional will complete the screening and conduct the evaluation of PWS wells which do not fall out under the simple screening. The rule has been modified to not include use of the old mode for evaluating risk to PWS wells.

ITEM 5 Amend paragraphs 135.12 (3) "d" and "e" as follows:
"e. …All existing plastic water lines, drinking water wells and non-drinking water wells within 100 feet of the largest actual plume (defined to the appropriate target level for the receptor type) must be tested annually for chemicals of concern. Actual plumes refer to groundwater plumes for all chemicals of concern."

PMMIC Comment: e. We do not agree with adding monitoring of additional plastic waterline and wells. These new monitoring requirements are not supported by science. The new criteria requires monitoring outside the area of contamination and requires the monitoring of plastic waterlines even though documented scientific studies indicate that such lines are not at risk to the chemicals of concern being monitored.

Response: This sampling has been standard practice for several years as a means of determining whether the receptors have been impacted. When receptors are located this close to plumes, it essential to test for chemicals of concerns particularly to ensure the public is not being exposed or ingesting petroleum compounds. The rules have been modified – the requirement for sampling plastic water lines on an annual basis has been removed but remains in guidance pending the outcome of future discussions on plastic water lines. Wells within 100 feet of the actual plume must be sampled.

ITEM 7 Amend 135.18 by adding paragraphs (5), (6), and (7):….

These items described the transition policy, when and how the new software can be used under different scenarios. E.g., " ..If the leaking underground storage tank site is undergoing active remediation, the remediation system shall remain operating until the re-evaluation is completed and accepted or as otherwise approved by the department. Once a site has been evaluated using the *Tier 2 Version 3.1* software, it can no longer be evaluated with the previous *Tier 2 Version 2.51* software except for the Groundwater Ingestion to Drinking Water Well Pathway where applicable per 135.10(4)(b)."

PMMIC Comment: These changes are not necessary if the unsupported items are eliminated.

Response: The comment is acknowledged. The DNR believes a transition rule is necessary because it was agreed that using the new model was optional to an owner/operator. Recognizing that the majority of LUST sites have been evaluated using Tier 2 version 2.51 (old model), the results of those analyses must be deemed valid, and therefore the old version of model remain in rule. Additional language was added to ensure re-evaluation of the site via 'flip-flopping' between models is avoided. Also, there needs to be some assurance that remediation systems under operation to cleanup contamination and/ or control plume migration are not simply shutdown to rerun the model. The intent is to prevent exposure or not allow conditions to worsen.

* PMMIC Comments were generally echoed by representatives from PMCI, Caseys, and the UST Fund.